

II. AMENDMENTS TO THE CLAIMS

Claims 1-20. (Cancelled).

21. (Currently Amended) A method of co-depositing particles, comprising ~~the steps of:~~
suspending the particles in a suspension, wherein the particles comprise at least one of a
magnetic core or a magnetic coating and the suspension comprises a solder material;

applying at least one magnetic field to the particles ~~in order~~ to vary a co-deposition rate
or location of the particles;

co-depositing on a substrate the particles and the solder material ~~along with at least one
component of the suspension, the component comprising a composition different than a
composition of the particles,~~ thereby resulting in a deposit comprising embedded the particles
embedded in the solder material; and

forming a desired structure.

22. (Currently Amended) The method of claim 21 wherein the applying at least one magnetic
field to the particles ~~step~~ comprises controlling at least one deposition location of the particles.

23. (Currently Amended) The method of claim 21 wherein the applying at least one magnetic
field to the particles ~~step~~ comprises controlling a particle loading.

24. (Cancelled).

25. (Currently Amended) The method of claim 22 wherein the particles ~~have been~~ are coated
with at least one coating.

26. (Original) The method of claim 25 wherein the coating is magnetic.

27. (Currently Amended) The method of claim 21 wherein the suspending the particles in a
suspension ~~step~~ comprises suspending the particles in an electrolytic solution.

28. (Cancelled).
29. (Currently Amended) ~~The A~~ method of ~~claim 21~~ co-depositing particles, comprising:
suspending the particles in a suspension, wherein the suspending-step suspension
comprises ~~suspending the particles in~~ an ink or paste;
applying at least one magnetic field to the particles;
co-depositing the particles along with at least one component of the suspension; and
forming a desired structure.
30. (Currently Amended) The method of claim 22 wherein the forming a desired structure
step comprises filling a via.
31. (Currently Amended) The method of claim 30 wherein the forming a desired structure
step comprises accelerating a fill rate by controlling particle loading.
32. (Currently Amended) The method of claim 30 wherein the forming a desired structure
step further comprises controlling the particle location with at least one external magnetic field,
thereby permitting fill electrodeposition within the via without the presence of prior seed
metallization of an entire surface of the via.
33. (Currently Amended) A method of making a via comprising ~~the steps of:~~
providing seed metallization to only a portion of a surface of the via; and
subsequently co-depositing in the via conducting or non-conducting particles dispersed in
a solder material an electrodeposit, thereby forming a via comprising embedded particles
embedded in the solder material, said particles improving either electrical or mechanical
properties of the via;
wherein a composition of the electrodeposit is different than a composition of the
particles.

Claims 34-37. (Cancelled).

38. (NEW) A method of co-depositing particles comprising:
preparing a composition comprising particles and an electrodepositable material, wherein the particles comprise at least one of a magnetic core or a magnetic coating;
co-depositing on a substrate the particles and the electrodepositable material via a process selected from the group consisting of electrodeposition, electrophoresis, electroplating, evaporation, screen printing and photostencil bumping;
applying a magnetic field to the particles to vary a co-deposition rate or location of the particles on the substrate; and
directing the particles and electrodepositable material to a desired location at a desired rate on the substrate resulting in a deposit comprising the particles embedded in the electrodepositable material.
39. (NEW) The method of claim 38 wherein the applying at least one magnetic field to the particles comprises controlling at least one deposition location of the particles.
40. (NEW) The method of claim 38 wherein the applying at least one magnetic field to the particles comprises controlling a particle loading.
41. (NEW) The method of claim 39 wherein the particles are coated with at least one coating.
42. (NEW) The method of claim 41 wherein the coating is magnetic.